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ABSTRACT

A review of human investment in education considers the pivotal human capital theory in relation to complementary, replacement, and opposing hypotheses and the interrelationship of workers, education, and workplace production. Analysis of definitions of human capital concludes that it is the marketable value of an individual that additional education and training should improve. The screening hypothesis (or theory of credentialism) is a complement or an alternative to human capital theory. Employers use educational credentials as criteria for hiring because educated workers may possess a higher level of other skills. In the competition model, similar to the screening hypothesis, workers are selected by employer preference and often trained on the job. The labor market segmentation model has two types: one relating to technological requirements and the theory of primary and secondary labor markets. Radical theorists have accused capitalists of deliberately creating the segmented labor market to evade unionization and worker militancy through a divide and conquer strategy. Of these theories, only the radical approach recognizes the importance of high quality education but advocates a social revolution that shifts educators from preparing workers for the work force to indoctrinating them with communal economic philosophy. All approaches fail to give adequate consideration to the individual. A newly modified human capital theory emphasizes sociological theory through the individualization theorem. It charges each individual with the responsibility of life decisions. (Contains 33 references.) (YLB)

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Individualism, Inspiration and Personal Market as Related to Education and the Workplace

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TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

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Abstract

Through a review of human capital theory, the screening hypothesis, competition model, labor market segmentation, individualism, and radical perspectives, this paper explores the relationships between personal opportunity and higher education. Furthermore, this paper explicates the debate over education as preparing workers for the workforce to indoctrinating them with communal economic or humanistic philosophies.

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"The direction in which education starts a man will determine his future life" (Plato). If we assume individuals have the opportunity to determine the education they receive and the ambition and ability to pursue their education, then we could assume individuals would develop the knowledge and skills to fulfill their human needs. Maslow (1970) identifies human needs as a hierarchy of human needs taxonomy transcending from physiological to safety, social, esteem, and self actualization.

Rumberger found that "more-educated individuals are more likely to have jobs that offer the characteristics they require to achieve satisfaction in their jobs" (1981, p. 107). Indeed, education may lead to job satisfaction in addition to potential fulfillment of the most basic physiological needs to sustain life itself, that of food, clothing, and shelter through labor-wages.

A review of human investment in education illuminates the pivotal human capital theory to complementary, possible replacement and opposing hypothesis, and the relationship of workers, education and the workplace production.

The classical human capital approach does not account for individuals and analyzes human capital from an economic perspective for strength and growth, whereas, the neo-classical human capital approach views workers as owning their own labor.

Kiker advocates that most economists categorize people as human capital for three reasons: "(1) the cost of rearing and educating human beings is real cost; (2) the product of their labor adds to the national wealth; (3) an expenditure on a human being that increases this product will *ceteris paribus*, increase national wealth" (1966, p. 485). Schultz (1982) defines human capital as personal stock acquired through education and experiences.

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Human beings have knowledge and skills embodied in them which enable them to use their talents to provide valuable services. Development of these abilities entails investments in personal stock which is therefore referred to as human capital. Woodhall (1995) espouses that human capital involves human beings endeavoring to improve their earnings through investing in themselves through education and training. Analyzing these definitions one may conclude that human capital is the marketable value of an individual, therefore additional education and training should improve this marketable value.

Becker (1993) and others found the following sequential relationship of education to the individual's earnings:

$$\text{Education} \Rightarrow \text{Growth of Potential} \Rightarrow \text{Productivity} \Rightarrow \text{Earnings}$$

This relationship of education to production and earnings has inspired economic studies of benefit-cost analysis for different levels of education. These studies pinpoint four approaches to identify the benefit and cost of education: simple correlation, residual, direct returns to education, and indirect returns to education approaches (Cohn & Geske 1990). Analyzing the benefits and cost to the individual research identifies educational cost (and potential earnings of that cost if education was not undertaken), earnings forgone while acquiring education, positive returns to show net earnings and earnings differentials from different levels of education (Becker 1993, Blaug 1976, Cohn & Geske 1990, Psacharopoulos 1985, Stoikov 1975, and others).

Mincer (1989) found that education prior to entering the workforce affects lifelong earnings, but does not effect the shapes or slopes of the wage profiles. This advocates the

completion of secondary school and consideration of post-secondary higher education or preparatory vocational training.

Stoikov (1975) found in his study of recurrent education that when older individuals did not previously have the opportunity to invest in education, the human capital losses for investing in education were nominal compared to optional postponement of education, whereas, the human capital losses were considerable in relation to return on investment. His study found that with real-world experience and training, older adults that did not have previous opportunities could benefit from investing in further education. However, Stoikov's research assumed that individuals were leaving the workforce for the duration of the education. His research did not account for persons continuing to work while pursuing a recurrent education part-time, in which the results may have shown a substantial increase for the return on investment of older adults that had optionally postponed previous education.

Becker distinguishes between general education and specific training provided in the workplace. He espouses that the marginal productivity from general training will not benefit the company. Therefore workers should bear the cost of general training in exchange for marketability. Specific training may provide workers with increased security and income with little or no marketable skills; therefore, the company should bear some or all the training cost (1993).

Bowles and Gintes agree with empirical research that supports education enhancing worker productivity; however, they point out that most human capital theory benefits the

elite capitalists consisting of corporations and policymakers, and these capitalists benefit from increased production and profits at the expense of the wage earner (1975, 1976).

The screening hypothesis (or theory of credentialism) is a complement or an alternative to human capital theory. Screening hypothesis attempts to define a dynamic relationship between the demand for education and employment through the hiring practices of employers. Considering education in relation to increased productivity, the screening model identifies sociological selection in hiring practices. Given the unknown abilities of potential workers' ambition, confidence, interpersonal relations and cognitive skills, employers use educational credentials as criteria for hire because educated workers may possess a higher level of these skills (Blaug, 1976). Groot and Hartog found that under the screening hypothesis "employers pay higher starting wages to the higher educated because of incomplete information on productivity" (1995, p. 38). Very similar to the screening hypothesis, Groot and Hartog define the credentialism hypothesis requiring education as a prerequisite for hire in specific occupations. Cohn and Geske (1990) identify the screening (credentialism) hypothesis sequence whereas:

Investment in Education ⇒ Higher Credentials ⇒ Higher Earnings

Under the screening hypothesis workers seek educational credentials in order to obtain better positions. Therefore, this hypothesis relates to the demand side of education for the labor market, whereas, the human capital theory deals primarily with the supply of education for the labor market (Blaug, 1976).

The screening hypothesis provides a weak and strong version. The weak version shows that employers pay higher starting wages to higher educated workers because they do

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not have an adequate knowledge of the workers abilities. The strong version emphasizes that employers continue to pay higher wages to higher educated workers throughout their careers, even after they have ascertained their abilities (Cohn & Geske 1990, Groot & Hartog 1995). However, Groot and Hartog found results of empirical research that shows the strong version does not always apply.

The competition model is similar to the screening hypothesis. Thurow provides a lucid view of the American labor market in that workers compete for jobs opportunities and promotions in the workplace. Education does not always play the predominate role in this model. The workers are selected by employer preference and often trained on the job. "In effect, education becomes a defense expenditure necessary to protect one's market share" (Thurow 1972, p. 79). Therefore, workers obtain education credentials to compete for jobs.

The labor market segmentation model (dual labor markets) offers hypotheses for wage, benefit and employment gaps. "Labor market segmentation exists when workers of comparable productivity receive significantly different opportunities and job rewards" (DeFreitas 1995, p. 39). There are two types of labor market segmentation: one that relates to technological requirements and the predominant theory of a primary and secondary labor markets (Cohn & Geske 1990, DeFreitas 1995, Hinchliffe 1995).

Workers in the primary labor market enjoy employment stability, career ladder opportunities, and higher pay and benefits. This labor market follows human capital theory and often encompasses the perspective of internal labor markets, whereas it is beneficial for the employer to invest in employee training, above market wages, and benefits to reduce

turnover and increase efficiency of production (Cohn & Geske 1990, DeFreitas 1995, Doeringer 1995, Hinchliffe 1995).

The secondary labor market offers low wages, little or no benefits, and unstable employment. Employers in this labor market have seasonal or industry fluctuations that create unstable employment. These employers have little incentive to educate or train their workers and the human capital theory does not apply. Research indicates that the secondary labor market employs a larger percentage of non-whites than the primary labor market (Cohn & Geske 1990, DeFreitas 1995, Hinchliffe 1995). It is probable that after workers enter unstable jobs in the secondary labor market, where they receive low wages and no rewards for good work, performance and traits may develop poor work habits that make them undesirable to the primary labor market. Hence a class system develops from the segmented labor market (DeFreitas, 1995).

Radical theorists have accused capitalists of deliberately creating the segmented labor marker in order to evade unionization and worker militancy through a divide and conquer strategy. In addition, theorists charge the schools with perpetuating a class system and the segregated labor market (Bowles & Gintes 1975, 1976, DeFreitas 1995, Doeringer 1995).

The functionalist model is one social and cultural perspective found in the United States. Advocates of this theory promote use of schools for social efficiency to prepare the young with the competencies needed for adulthood, social efficiency and reproduction of workers for the workforce. Levin (1995) points out that this sociological approach has not

provided historical validation and fails to acknowledge diversity and treatment of different social classes and groups in the schools and workplace.

Marx charges the capitalists with consuming labor and reproducing the relationship of capitalists on one side and wage-workers on the other side through education, training, and the economic system. He identifies three factors that provide surplus-value and the price of labor power in the capitalist system: the length of the working day, the intensity of the labor and the productiveness of the labor. Any variation of these factors may effect the surplus-value outcome. Marx contends that capitalists do not pay wage-workers for all of their labor and therefore have exploited the workers into a form of slavery (1906).

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Neo-marxists provide perspectives of the radical approach revealing that human capital theory, screening hypothesis, competition model, labor market segmentation, etc. only benefit the elite at the expense of the populous. They concur with the human capital relationship that increased education can increase production. However, they identify longitudinal research that education reproduces economic inequity and wage workers with the desired traits demanded by employers (Bowles & Gintes 1975, 1976, Levin 1995). At the time that Bowles and Gintes published their research the workplace used the Taylorism (Fordism) management methodology (1976). At that time, supporters of the radical approach indicted schools for educating and preparing workers for the Taylorism methodology. Bowles' and Gintes' (1976) study in a New York high school found that students were rewarded for identifying with the school, following directions, and being dependable, consistent, punctual, perseverant, externally motivated, predictable and tactful. Schools penalized students for being creative, aggressive and independent. As Levin (1995) points out, the nature of education and workplace changes with time, and the relationships between schools, families, on the job training and other influences need to be better understood and require further study.

Bowles and Gintes (1976) identify a social revolution as a shift in control of production from the capitalists and bureaucrats to the workers themselves. This shift in power to the workers should include the elimination of racism and sexism. They provide five aspects a school system altered with their socialist strategy must have: 1) Democratic schools and colleges in which students, parents, teachers and community members participate to pursue interest and resolve disputes, 2) a liberated education along with

education for economic democracy, 3) a dialectic educational philosophy to enhance personal development, authority and interpersonal relationships, 4) educators that endeavor to create a unified class consciousness, extend control to the students and community to offer curricula that is personally liberating and politically enlightening, and 5) reforms that fulfill needs of students, parents, teachers and the community through democracy, free education, open enrollment, adequate financial aid, equity and socialist content of education.

Rumberger (1981) studied the effects of over-education in the United States. He defined over-education as the realization that, after obtaining education, one has not received expected earnings, one s expected job opportunities were not available or the job has not provided opportunities for one to use cognitive skills.

Identifying the effects of over-education Rumberger (1981) found that possible effects of over-education include job dissatisfaction, deterioration of mental and physical health, turnover, absenteeism, strike activity, drug problems, industrial sabotage and ultimately lower productivity. He found that over-education was widespread in the workforce and that as long as employers followed the screening hypothesis and hired the higher educated, over-education would continue. Although Rumberger's empirical study analyzed the Dictionary of Occupational Titles (DOT) and the one question related to respondents job on the Current Population Surveys, he admits that the accuracy of the DOT data has a potential for error and that the comparative data originated from one question on a survey. It is plausible that Rumberger's case study on the effects of over-education is

most likely valid; however, the empirical data may contain considerable flaws and there may be in effect very little over-education.

This review of human investment identified several positive effects relating to workers, education and the workplace production through the human capital, complementary, potential replacement and opposing theories. However, all these theorems have deficiencies.

Welsh identifies two distinct phenomena emanating from education as one factor of production: the worker effect that falls under the normal definition of marginal product of education, and the allocative effect of the analytical skills obtained through education that enables workers to utilize new resources and technologies (1970). Here lies a failure in human capital theory, for when workers receive specific training, rapid technological advances may make their skills obsolete within a period of time, whereas, when workers receive general training they can utilize their allocative effect of analytical skills to increase production with new emerging technologies. In addition, "the human-capital explanation of labor training founders on the failure to provide a testable theory of occupational choice" (Blaug 1976 p.839).

Human capital theory, the screening hypothesis, competition model, and labor market segmentation all recognize relationships between the quantity of education and production but omit references to the quality of education. Schultz (1982) advocates the value of quality education as human capital for society, family, and the individual. The radical approach recognizes the importance of a quality education but advocates a social revolution to a communal system that shifts educators from preparing workers for the

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workforce to indoctrinating them with communal economic philosophy. Furthermore, one may recognize that the quality of education is relative to an individual's assessment, and correlates each person's values and philosophies into personal perceptions; there is not substantial empirical data to define the quality of education.

Even though some of these approaches have attempted to do so, it appears that all of these approaches fail to completely consider the individual and the individual's needs. Maslow (1970) points out that the individual has needs, wants, and desires that if left unfulfilled may hinder self esteem, self actualization, or enlightenment. If one assumes that individuals need to identify through their position in society, that individuals want opportunities to progress toward fulfilling their goals, and that individuals desire improvements over their current situation, then one may conclude that the individual is concerned about self development and fulfillment. Through self development the individual will analyze personal attributes and seek methods of marketing these attributes, thus creating a personal market strategy.

Indeed, a newly modified human capital theory emphasizes sociological theory through the individualization theorem. The individualization approach recognizes the "rational individual choice" and charges each individual with the responsibility of life decisions (Timmerman 1995, p. 240). Individuals have to recognize that they are responsible for themselves and must learn to master their personal labor power and life, or, in other words, develop and continually improve on their personal mastery skills (Timmerman, 1995). Peter Senge (1990) defines personal mastery as discipline of personal

growth and learning; individuals possessing personal mastery strive to continually improve themselves and create the results in life they desire.

The deficiencies of the individualization theory include social, cultural, and emotional influences that may hinder the ability of individuals to make rational choices. This, in effect, has created stratification within social classes, created subculture within classes and augmented individual competition in the workplace (Timmerman, 1995).

Proponents of general liberal education have long pointed out that the liberal higher education can provide the knowledge and critical thinking skills to realize self actualization and enlightenment (Newman, 1959 & Barnett, 1994). Stoikov (1975) found that higher education for many adults was not available to them in the past and should be made available in the future.

Concluding that individuals desire or would benefit from general education, that individuals use their abilities to make rational choices, that individuals may have social, cultural, and emotional influences inhibiting their choices, and that cost may prohibit individuals from realizing a general education, suggests the implementation of 'real world' options that encourage individuals in their educational pursuits. One potential hypothesis available for consideration requires that industry provide general higher education and potential career ladders or employee mobility. This contradicts human capital research indicating benefits to employers for providing specific skills training, and no benefits for providing general training. This assumption must find a rationale for employers to abandon previous practices and provide a general education for their employees in the current economic system.

Some employers feel they have found a rationale for providing general education opportunities for workers. Indeed, Honeywell (Canada) LTD. in Scarborough, Ontario, with 500 hourly employees, addressed this motivational factor through education. Instead of modernizing the equipment, slashing wages, and streamlining the workforce, Honeywell developed a partnership with Humber College (a community college in the Toronto area) and launched a lifelong learning initiative to enhance self-directed work teams, empowerment, global competitiveness, and a high-performance workplace. From 1991 to 1993, sixty percent of Honeywell's employees participated in an after-work 'Learning for Life' program, attending college level courses with opportunities to earn college diplomas and certificates. Employees received free instruction, books, and supplies, and attended classes in classrooms at the workplace on their own time (Nopper, 1993).

The result of the Honeywell and Humber College education and training partnership is admirable. Two years into the project, Honeywell's per employee productivity was up forty percent, order to delivery time decreased by fifty percent, and their quality control improved by a fifty percent reduction in the rework and scrap rates (Nopper 1993).

In the United States, Fernberg (1993) and Hequet (1994) found that Ford Motor Company provides training at the workplace that promotes employee motivation and attitude on their current job, even if employees are training for another industry.

Ford Motor Company in partnership with the United Auto Workers (UAW) offered employees education and training opportunities through arrangements with local

educational institutions at twenty-nine plants. Classes were held at no cost to employees and were scheduled on site to accommodate all shifts. The program promotion included the UAW, a satellite broadcasting studio for teleconferencing and a traveling tractor-trailer containing an exhibit of a thousand square foot theater and displays identifying the numerous educational opportunities (Tomasko & Dickinson, 1991). An employee participation study of the 1980s through 1993 showed that: 1) fifty-five thousand active employees and spouses participated in basic skills enhancement in which over seven hundred have completed high school, 2) thirty-nine thousand active employees participated in personal development courses such as time management, computer skills, and interpersonal communication, and 3) forty-eight thousand active employees enrolled in college and university offerings held on site at twenty-nine plant locations. Through the degree offerings, eighteen hundred employees and eligible family members were graduated with twenty-five Associates, nineteen Bachelors, and six Masters Degrees (Hequet, 1994).

The Gordus, Kuo & Yamakawa (1991) study concluded that the Ford-UAW program was very successful and that the program benefited Ford and the employees through the life enhancement opportunities.

Through providing a general education rather than specific training that may be obsolete in a few years, these companies have invested in labor power and motivated their workforce with employees that possess the analytical skills to rapidly adapt to technological changes in the workforce. It is this motivation, personal mastery, and analytical skills that provides substantial increase in production and return on investment.

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Additional research is needed to validate that providing employees general education for lifelong learning, albeit education that may be unrelated to the workplace task, will improve profits and global competitiveness. However, Honeywell and Ford believe that investing in labor power will aid their future profitability and survival in today's global economy. This potential profitability for industry may enhance lifelong learning opportunities and inspiration for wage workers to develop personal markets.

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